

BITBUS Monitor

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Intel's BITBUS is an extensive protocol for the low cost networking of distributed control systems. Primarily intended for use in factory automation, BITBUS networks use one master and up to 250 slaves. The full specification may be found in Document no. 280645-001 © Intel Corporation.

The BITBUS specification has a pre-defined connector designation based on the standard 9 way 'D' connector. The pin-out is summarized in the **Table**. The **circuit diagram** shows the design of a simple differential BITBUS transmission detector. The original design was used to monitor the presence of BITBUS data between two pieces of control equipment.

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The BITBUS specification allows for two types of transmission, synchronous and self-clocked.

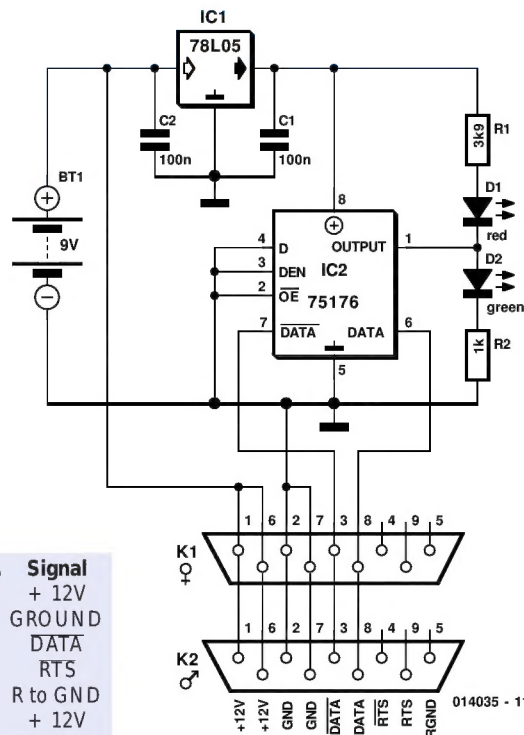
Synchronous transmission is used for high speed (0.5 to 2 Mbits/sec) data links over a short distance (30 metres). The data is transmitted using data and $\overline{\text{DATA}}$, and clocked by using RTS and $\overline{\text{RTS}}$.

Self-clocked mode permits data to be transmitted, all be it much slower, over greater distances — 375 Kbits/sec over 300 metres or 62.5 Kbits/sec over 1200 metres. Self-clocked mode combines serial data and the clock onto a single signal data and /data wire pair.

BITBUS data is detected using IC2, a 74176 RS485 transceiver. In this instance it is used in the receiver mode only. The DATA and $\overline{\text{DATA}}$ signal lines are wired to pins 8 and 3 of the connectors respectively. The receiver output, on pin 1, toggles when there is data present on the BITBUS network. This is represented by the two LEDs flashing on and off. The red LED represents a High, the green LED, a Low.

If the network utilises the full capability of the BITBUS system, the BITBUS Monitor can be powered from the +12 V supply line, which is available on pin 1 and pin 6 of the BITBUS connector. The +12 V is stepped down via IC1, a +5 V low-current regulator. Use of the BITBUS Monitor could not be simpler. Plug the Monitor into the network and the LEDs will flash if there is data present. If there is no data on the network only one LED will light.

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Pin no.	Signal
1	+12V
2	GROUND
3	DATA
4	RTS
5	R to GND
6	+12V
7	GROUND
8	DATA
9	RTS

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